

ABSTRACT OF THE DISCLOSURE

It is disclosed a cleaning liquid used in a process for forming a dual damascene structure comprising steps of etching a low dielectric layer (low-k layer) accumulated on a substrate having thereon a metallic layer to form a first etched-space; charging a sacrifice layer in the first etched-space; partially etching the low dielectric layer and the sacrifice layer to form a second etched-space connected to the first etched-space; and removing the sacrifice layer remaining in the first etched-space with the cleaning liquid, wherein the cleaning liquid comprises (a) 1 - 25 mass% of a quaternary ammonium hydroxide, such as TMAH and choline, (b) 30 - 70 mass% of a water soluble organic solvent, and (c) 20 - 60 mass% of water. The cleaning liquid attains in a well balanced manner such effects that a sacrifice layer used for forming a dual damascene structure is excellently removed, and a low dielectric layer is not damaged upon formation of a metallic wiring on a substrate having a metallic layer (such as a Cu layer) and the low dielectric layer formed thereon.